

REMARKS

Applicants respectfully request reconsideration of this application as amended.

The Office Action indicates that claims 1-5, 8, and 28-37 are pending in the application. Claims 1-5, 8 and 28-37 have been rejected.

Claims 1, 5, and 35 have been amended. Claims 2 and 3 have been cancelled. No new matter has been added.

Claim Rejections - 35 U.S.C. § 112

The Office Action has rejected claim 5 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action indicates that in claim 5 the phrase “a solvent supply means” is confusing. Claim 5, as amended, includes the phrase “a solvent-rich environment is maintained within the recovery drainpipe.” Paragraph [0024] describes a solvent-rich environment being maintained within the perimeter drain 250 and the recovery drain 255 of Figures 2 and 3. Applicants respectfully submit that amended claim 5 is clear and unambiguous.

For the reasons stated above, applicants respectfully request withdrawal of the rejection of claim 5 under 35 U.S.C. §112, second paragraph.

Claim Rejections - 35 U.S.C. § 103

The Examiner has rejected claims 1, 2, 8, 28-30, and 34-36 under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al. (U.S. Patent Application No. 2002/0112662) hereinafter “Yamauchi” in view of Applicant's Admitted Prior Art Teaching.

Claim 1, as amended, reads as follows.

A system for photoresist recovery comprising:
a nozzle to dispense a photoresist;
a bowl having an interior region and an interior surface;
a wafer platform disposed within the interior region of the bowl;
a wafer spindle coupled to the wafer platform, the wafer spindle to spin the wafer platform to propel an excess amount of photoresist deposited upon a wafer placed upon the wafer platform to the interior surface of the bowl;
a photoresist recovery container coupled to the bowl via a recovery drainpipe;
a recovery drainpipe block capable of being positioned in front of the recovery drainpipe to prevent contaminants from entering the recovery drainpipe;
a perimeter drain formed within the bowl by extending around the perimeter of the bowl such that the excess amount of photoresist propelled from the wafer proceeds through the perimeter drain to the photoresist recovery container; wherein the perimeter drain comprises a concave conduit for reducing the surface area contacting the photoresist being recovered; and
a weeping seal to permit a wash solvent to wash the excess amount of photoresist propelled from the wafer through the perimeter drain to the photoresist recovery container.

(Emphasis Added).

Applicant's invention relates to a system for photoresist recovery comprising: a wafer spindle coupled to the wafer platform, the wafer spindle to spin the wafer platform to propel an excess amount of photoresist deposited upon a wafer placed upon the wafer platform to the interior surface of the bowl; a photoresist recovery container coupled to the bowl via a recovery drainpipe; a recovery drainpipe block capable of being positioned in front of the recovery drainpipe to prevent contaminants from entering the recovery drainpipe; and a perimeter drain formed within the bowl by extending around the perimeter of the bowl such that the excess amount of photoresist propelled from the wafer proceeds through the perimeter drain to the photoresist recovery container; wherein the perimeter drain comprises a concave conduit for reducing the surface

area contacting the photoresist being recovered; and a weeping seal to permit a wash solvent to wash the excess amount of photoresist propelled from the wafer through the perimeter drain to the photoresist recovery container. Amended claim 1 includes the subject matter of cancelled claims 2 and 3.

The Office Action rejects claim 3 as being unpatentable over Yamauchi in view of Applicant's Admitted Prior Art Teaching and Chiu et al. (U.S. Patent No. 5,711,809) hereinafter "Chiu." The Office Action states that Yamauchi and Applicant's Admitted Prior Art Teaching are silent concerning a recovery drainpipe block. (Office Action, page 7, 01/24/08). Applicants agree that Yamauchi and Applicant's Admitted Prior Art Teaching are silent concerning a recovery drainpipe block.

Therefore, Yamauchi and Applicant's Admitted Prior Art Teaching do not teach or suggest the limitation "a recovery drainpipe block capable of being positioned in front of the recovery drainpipe to prevent contaminants from entering the recovery drainpipe" recited in amended claim 1.

The Office Action states that Chiu teaches using a block which includes lip 214 positioned in front of the recovery drainpipe such that it blocks the flow of coating into a collecting means for collecting coating therein. (Office Action, page 7, 01/24/08). Applicants respectfully disagree with this characterization of Chiu.

Chiu discloses a gutter and splash-guard for protecting a wafer during transfer from a single wafer cleaning chamber. Chiu discloses:

The angled section 203 of the catch cup 204, when positioned in the process position, places the surface 216 near the gutter 212 where the catch cup 204 can act as a splatter guard and deflect spray 201 (FIG. 2B) from the rotating wafer 210 away from the exposed gutter surface 214. By deflecting the spray from the wafer 210, here cleaning and rinse solutions, liquids can be kept away from the gutter inboard surface 214. Liquids flowing to this gutter inboard surface 214 could

potentially travel down to collect on a bottom surface 217 of the upper ring 202 to later fall onto a cleaned wafer (not shown) as it transfers out of the cleaning chamber.

(Chiu, col. 7, lines 36-48).

Chiu also discloses:

As shown in FIG. 4A, the upper ring 402 has the gutter 414 positioned at the bottom end 416. Visible in the gutter 414 are a series of drains 418 at the bottom or base 428 of the gutter 414 to allow for drainage of liquids (not shown) collected by the gutter 414. Without drainage 418, fluid collected can overflow the gutter 414 and result in liquid flow onto the gutter inboard surface 214 (FIG. 2B) and ultimately onto a wafer during wafer transfer.

(Chiu, col. 8, lines 49-56).

Thus, Chiu teaches keeping liquids away from the gutter inboard surface 214 in order to keep these liquids from falling on a clean wafer as it transfers out of the cleaning chamber. The gutter 414 directs the drainage of liquids into a series of drains 418.

In contrast, Chiu is silent regarding a recovery drainpipe block capable of being positioned in front of a recovery drainpipe. Chiu fails to teach or suggest a recovery drainpipe block capable of being positioned in front of a recovery drainpipe because Chiu teaches a gutter that directs liquids into drains rather than blocking these liquids from entering the drains. Thus, Chiu fails to teach or suggest the limitation "a recovery drainpipe block capable of being positioned in front of the recovery drainpipe to prevent contaminants from entering the recovery drainpipe" as recited in amended claim 1.

Therefore, Chiu does not teach or suggest the limitations stated in amended claim 1.

It is respectfully submitted that Yamauchi does not teach or suggest a combination with Applicant's Admitted Prior Art, and Applicant's Admitted Prior Art Teaching does not teach or suggest a combination with Yamauchi. It would be impermissible hindsight to combine Yamauchi with Applicant's Admitted Prior Art Teaching based on applicants' own disclosure.

It is respectfully submitted that Yamauchi does not teach or suggest a combination with Chiu, and Chiu does not teach or suggest a combination with Yamauchi. Yamauchi discloses separating and collecting waste fluids while Chiu teaches keeping liquids away from the gutter inboard surface 214 in order to keep these liquids from falling on a clean wafer as it transfers out of the cleaning chamber. It would be impermissible hindsight to combine Yamauchi with Chiu based on applicants' own disclosure.

Furthermore, even if Yamauchi, Applicant's Admitted Prior Art Teaching, and Chiu were combined, such a combination would lack at least the limitation "a recovery drainpipe block capable of being positioned in front of the recovery drainpipe to prevent contaminants from entering the recovery drainpipe." (amended claim 1).

Therefore, in view of the above distinction, neither Yamauchi nor Applicant's Admitted Prior Art Teaching nor Chiu, individually or in combination, teach or suggest each and every limitation of amended claim 1. As such, amended claim 1 is not rendered obvious by Yamauchi in view of Applicant's Admitted Prior Art Teaching and Chiu under 35 U.S.C. § 103(a).

Independent claim 35, as amended, contains similar limitations but not identical compared to amended claim 1. For the reasons stated above,

independent claim 35 is not rendered obvious by Yamauchi in view of Applicant's Admitted Prior Art Teaching and Chiu under 35 U.S.C. § 103(a).

It is submitted that claims 8, 28-30, 34, and 36 are not rendered obvious by Yamauchi in view of Applicant's Admitted Prior Art Teaching and Chiu under 35 U.S.C. § 103(a) given that claims 8, 28-30, 34, and 36 depend from and include the limitations of one of the corresponding independent claims 1 and 35.

The Examiner has rejected claims 4 and 37 under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Applicant's Admitted Prior Art Teaching and Yamasaka (U.S. Patent No. 5,997,653) hereinafter "Yamasaka".

Claims 4 and 37 depend from and include the limitations of one of the corresponding independent claims 1 and 35 noted above. It is submitted that Yamasaka fails to cure the deficiencies of Yamauchi in view of Applicant's Admitted Prior Art Teaching noted above with respect to claims 1 and 35, and therefore, claims 4 and 37 are patentable over the combination of cited references.

The Examiner has rejected claims 31-33 under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Applicant's Admitted Prior Art Teaching and Curtiss et al. (U.S. Patent No. 6,740,163) hereinafter "Curtiss".

Claims 31-33 depend from and include the limitations of independent claim 1 noted above. It is submitted that Curtiss fails to cure the deficiencies of Yamauchi in view of Applicant's Admitted Prior Art Teaching noted above with respect to claim 1 and, therefore, claims 31-33 are patentable over the combination of cited references.

The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Applicant's Admitted Prior Art Teaching and Kimura et al. (U.S. Patent No. 5,711,809) hereinafter "Kimura".

Claim 5 depends from and include the limitations of independent claim 1 noted above. It is submitted that Kimura fails to cure the deficiencies of Yamauchi in view of Applicant's Admitted Prior Art Teaching noted above with respect to claim 1 and, therefore, claim 5 is patentable over the combination of cited references.

The Examiner has rejected claims 3, 4, and 37 under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Applicant's Admitted Prior Art Teaching and Nakamori et al. (U.S. Patent No. 6,589,338) hereinafter "Nakamori".

As previously discussed, claim 3 has been cancelled. Claims 4 and 37 depend from and include the limitations of one of the corresponding independent claims 1 and 35 noted above. It is submitted that Nakamori fails to cure the deficiencies of Yamauchi in view of Applicant's Admitted Prior Art Teaching noted above with respect to claims 1 and 35 and, therefore, claims 4 and 37 are patentable over the combination of cited references.

CONCLUSION

Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Mr. Jeremy Schweigert at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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